Three new records of *Syzygium* Gaertn. in Thailand and lectotypification of 19 taxa of *Eugenia* L. (Myrtaceae)

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INTRODUCTION

*Syzygium* Gaertn. is the largest genus in the family Myrtaceae with approximately 1,200 species, the majority of which occur in the Old World. The most comprehensive revision of the genus in Thailand was made by Parnell & Chantaranothai (2005) who treated 84 species (97 taxa). Visits to the Forest Herbarium, Bangkok (BKF), the Natural History Museum, London (BM) and the Herbarium of the Royal Botanic Gardens, Kew, Richmond, Surrey (K) in late 2013, and to the Herbarium of the Singapore Botanic Gardens (SING) in April 2014, allowed many unidentified specimens from mainland SE Asia to be examined and the publications of King (1901) and Turner (1996) to be consulted. Previously unknown records of *S. chloroleucum*, *S. kemamanense* and *S. vestitum* from Thailand were found and 19 lectotypes, proposed here, were identified. Nearly all specimens cited here have been seen, those that have not been seen are indicated by *n.v.*

NEW RECORDS


Tree to 6 m tall; young twigs 4-angled, becoming terete; bark brownish. Leaves with petiole 1–2 cm long; lamina coriaceous, 11.5–15 by 2.9–4.5 cm, narrowly elliptic or oblanceolate, base attenuate or narrowly cuneate, apex acuminate or acute; midrib impressed adaxially, prominent or slightly keeled abaxially; secondary veins 12–20 pairs; intramarginal vein, 2–3 mm from margin. Inflorescence up to 4.5 cm long, terminal, rarely axillary; peduncle to 1.5 cm long, rachis and branches rather stout. Flowers white, in triads, subtended by two bracteoles, the outer two flowers with a pedicel 2 mm long, the central flower sessile; bracteoles 1 by 1 mm, triangular, persistent. Hypanthial cup ca. 3 mm long, funnel-shaped. Pseudostipe absent. Sepals 4, 2 by 1 mm, semi- orbicular, persistent. Petals 4, 1.5–1.8 mm diam., pseudo-calyptrate, orbicular, membranous, 30–50 pellucid gland dots per petal. Outer stamens ca. 4 mm long; anthers ca. 0.5 mm long, ovate to oblong. Style ca. 2.5 mm long, stout. Ovary 2-locular, 10– 12 ovules per locule. Fruits ca. 1 cm long, ellipsoid, rugose when dry.

Thailand.— PENINSULAR: Phangnga [Mueang Phangnga, Ton Pariwat Wildlife Sanctuary, 2006,
D.J. Middleton, C. Hemrat, S. Lindsay, S. Suddee & S. Suwanachat 3966 (K).

Distribution.— Sumatra, Peninsular Malaysia (type collection from Perak-type).

Ecology.— In disturbed evergreen forest, alt. 450 m.

Vernacular.— Wa khiao (หว้าเขียว).

Note.— An unidentified specimen seen at K undoubtedly belongs to S. chloroleucum. The species is morphologically similar to S. fastigiatum (Blume) Merr. & L.M.Perry in having persistent bracts and bracteoles. The former has shorter inflorescences (up to 4.5 cm long), leaves less than half as long as the latter, with more widely spaced secondary veins that are more conspicuous than the tertiary veins, while the inflorescence of the latter is more than half as long as the leaves (up to 12 cm long) and secondary and tertiary veins are more or less similarly conspicuous.

Additional material examined.— PENINSULAR MALAYSIA:

PERAK: Larut, 2,000 feet, June 1881, King’s Collection 1901 (K), 1,500–2,000 feet, Sept. 1883, 4951 (K) Feb. 1885, 7307 (young fruits, K); Taiping Hills, Feb. 1904, Ridley 11920 (K); Tea Gardens, Larut, no date, Scortechini 45 (young floral buds, K); Maxwell’s Hill, by Tea Garden, 18 Nov. 1969, T.C. Whitmore FRI 12887 (K); 30 Oct. 1969, K.M. Kochummen 2895 (K); 4 March 1965, Hardial & Samsuri FRI 294 (K).

PAHANG: Stateland Raub, 23 March 1971, Z. Sohadi FRI 14681 (K).

SELANGOR: Kepong, 23 Dec. 1946, J. Wyatt-Smith 60640 (K); Sg. Buloh FR, 31 March 1967, K.M. Kochummen FRI 2264 (K).


Tree to 8 m tall; twigs whitish grey. Leaves with petioles 3–4 mm long; lamina thinly coriaceous, elliptic to elliptic-lanceolate or obovate, 11.5–18 by 4.5–7.5 cm, apex acute or acuminate, base cuneate, rarely rounded, pale brown on both surfaces when dry; midrib impressed adaxially; secondary veins 8–11 pairs, impressed above; inner inframarginal vein 5–10 mm from margin, outer inframarginal vein faint, near margin. Inflorescence up to 10 cm long, in the axils of fallen leaves, paniculate, with several pairs of spreading decussate branches; peduncle up to 1 cm long, compressed. Flowers white; pedicel 0.5–1 mm long. Hypanthial cup 3.5–4.5 mm long, funnel-shaped. Pseudostipe 1.8–2 mm long. Sepals 4, 3–3.5 x 4 mm, semi-orbicular. Petals 4, 4–5 by 5–6 mm, free, orbicular, 70–100 pellucid gland dots per petal. Outer stamens ca. 4 mm long; anthers ca. 0.5 mm long, ovate to oblong. Style 4–5 mm long, longer than the stamens. Ovary 2-locular, 19–23 ovules per locule. Fruit globose to depressed-globose, up to 3 cm diam., with persistent calyx lobes.


Distribution.— Peninsular Malaysia (type).

Ecology.— Tropical rain forest.

Vernacular.— Wa nara (หว้านรา).

Note.— S. kemamanense is distinctive in having obovate or elliptic leaves with strongly sunken and widely spaced secondary veins and inflorescences in the axils of fallen leaves. The Thai specimen extends the range of this species from peninsular Malaysia northward to southern Thailand.

Additional material examined.— PENINSULAR MALAYSIA:

TRENGGANU: Kemaman, Ulu Ayam, Kajang, 9 Nov. 1935, E.J.H. Corner SFN 30352 (K isotype).


Tree ca. 8 m tall; twigs terete, densely red-dish brown villous; branchlets, petiole, peduncle, rachis, bracts and bracteoles reddish brown villous. Leaves with petiole 2–3 mm long; lamina 12–22 by 4–7 cm, elliptic, oblong or oblong-lanceolate, coriaceous, base obtuse or rounded, apex acuminate.
or acute; adaxial black when dry, with scattered, minute, punctuate pellucid gland dots; abaxial brown when dry; midrib and secondary veins lightly villous above, densely below; midrib raised adaxially; secondary veins 17–22 pairs; intramarginal vein 1.5–2 mm from margin. Inflorescence to 10 cm long, both terminal and in the upper axils, paniculate, solitary or several fasciculate with several pairs of spreading decussate branches; peduncle up to 8 cm long, compressed; bracts 5–7 mm long, linear, persistent; bracteoles 2–3 mm long, linear, persistent. Flowers white, sessile. HYpanthial cup 3.7–4.5 mm, funnel-shaped, villose. Pseudostipe 0.6–0.8 mm long, villous, villosulous. Sepals 4, 0.7–0.9 by 1.8 mm, transversely oblong. Petals 4, 3–3.5 by 3 mm, free, orbicular, 30–50 gland dots per petal. Outer stamens 8–10 mm long; anthers 0.4 mm long, oblong-elliptic. Style 10–13 mm long, exceeding the stamens. Ovary 2-locular, 6–8 ovules per locule. Fruits globose or subglobose, sparsely hairy, 4–5 cm in diam.


Additional material examined.— LAOS: VIENTIANE: P. Souladeth 86 (Forestry herbarium-Lao PDR, KKU), 91 (Forestry herbarium-Lao PDR, KKU-2 sheets).


NEW LECTOTYPIFICATIONS

King (1901) published 97 Eugenia species from the Malayan peninsula, 51 of which were new species. He described and cited syntypes for some species and therefore, it is necessary to select one to stand as the lectotype. The following 19 lectotypes are selected from the available syntypes cited by King (1901). The designated sheet is that which best matches the protologue. These taxa are now accepted in Syzygium and are presented here in alphabetical order.


Syntypes: *King’s Collector 4719* (K) & 6186 (BM-2 sheets, K) and L. Wray 2785 (K, SING-3 sheets) & 3070 (K, SING).

Lectotype: Peninsular Malaysia, Perak, Taiping, L. Wray 3070 (K, barcode K000786911, isolecotype SING, barcode 0055849, selected here).


Syntypes: *King’s Collector 1901* (BM, K), 4951 (K), 7307 (BM, K), Scortechini 45 (K) and L. Wray 2917 (P).

Lectotype: Peninsular Malaysia, Perak, Larut, June 1881, *King’s Collector 1901* (K, barcode K000800004, isolecotype BM, barcode BM000944150, selected here).


Syntypes: *Harvey s.n., n.v.* and L. Wray 194 (K).

Lectotype: Peninsular Malaysia, Perak, L. Wray 194 (K, barcode K000786923, selected here).


Syntypes: King’s Collector 781 (K), 3349 (K), 3491 (K), 3493 (BM), 3573 (K), 6822 (BM, K, SING) & Scortechini 205 (K-2 sheets, SING).

Lectotype: Peninsular Malaysia, Perak, Larut, King’s Collector Scortechini 3349 (K, barcode K001005975, selected here).


Syntypes: King’s Collector 5298 (K, SING-2 sheets), 6987 (K).

Lectotype: Peninsular Malaysia, Perak, Larut, December 1883, King’s Collector 5298 (K, barcode K000786894, isolectotypes SING, barcode SING00555769, SING, barcode SING0055770, selected here).


Syntypes: King’s Collector 4541 (CAL n.v., K), 6974 (CAL n.v., K, SING) & Scortechini 365 (CAL n.v., FI n.v., K; Beccari 365 vide Ashton, 2011).

Lectotype: Peninsular Malaysia, Perak, December, 1884, King’s Collector 6974 (K, barcode K000786879, isolectotype CAL n.v., SING, barcode SING00555787, selected here).


Syntypes: King’s Collector 5982 (BM, K) & 6090 (K-3 sheets).

Lectotype: Peninsular Malaysia, Perak, Larut, April 1884, King’s Collector 5982 (K, barcode K000786902, isolectotype BM, selected here).


Syntypes: King’s Collector 3407 (BM, K, SING); Scortechini 163 (K, SING-2 sheets) & L. Wray 2952 (K, SING).

Lectotype: Peninsular Malaysia, Perak, Maxwell Hill, Taiping, L. Wray 2952 (K, barcode K00086862, isolectotype SING, barcode SING0055800, selected here).


Syntypes: L. Wray 4144 (K), 4150 (BM, K, SING) & 5154 (K).

Lectotype: Peninsular Malaysia, Gunong Inau, May 1892, L. Wray 4144 (K, barcode K001005774, selected here).


Syntypes: Curtis 975 (K), 2845 (BM, K), H.N. Ridley 8617 (P) & Scortechini 326 BM, K-2 sheets.

Lectotype: Peninsular Malaysia, Government hill, June 1892, Curtis 2845 (lectotype K, barcode K000786961, isolectotype BM, selected here).


Syntypes: King’s Collector 6208 (K), 6233 (BM, K, SING), 6385 (K-2 sheets) & Scortechini 257 (K).

Lectotype: Peninsular Malaysia, Perak, Larut, July 1884, King’s Collector 6385 (K, barcode K000786976, isolectotype K, barcode K000786975, selected here).

Syzygium gaerteri (Korth.) Merr. & L.M.Perry, Mem. Amer. Acad. Arts & Sci. 18: 156. 1939.—
Jambosa gaerteri (Korth.) Merr. & L.M.Perry, isolectotype, barcode K000786950, SING, selected here).

Syzygium leptostemon (Korth.) Merr. & L.M.Perry, Mem. Amer. Acad. Arts & Sci. 18: 156. 1939.—
Jambosa leptostemon (Korth.) Merr. & L.M.Perry, isolectotype, barcode K000786981, SING, selected here).


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REFERENCES


